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Patent Department
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EXAMINER	
PRENDERGAST, ROBERTA D	
ART UNIT	**PAPER NUMBER**
2628	

DATE MAILED: 03/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	**Application No.** 10/624,018	**Applicant(s)** WURMLIN ET AL.
	Examiner Roberta Prendergast	**Art Unit** 2628

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 08 December 2005.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-20 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 08 December 2005 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Art Unit Designation has changed from 2671 to 2628

Drawings

Examiner acknowledges the amendment to the Specification and to Figure 1 of the drawings dated 12/08/2005 correcting the errors that resulted in the objection to the drawings and therefore the objection to the drawings is hereby withdrawn.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 7-8, 10 and 13-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matusik et al., “Polyhedral Visual Hulls for Real-Time Rendering”, Proceedings of Twelfth Eurographics Workshop on Rendering, 2001, pages 115-125, in view of Deering U.S. Patent No. 5867167.

Referring to claim 1, Matusik et al. teaches a method for providing a virtual reality environment, comprising: acquiring concurrently, with a plurality of cameras, a plurality of sequences of input images of a 3D object, each camera having a different pose (page 115, Section 1 Introduction, 4th paragraph; page 123, Section 4 Real-Time System, 1st paragraph); reducing the plurality of sequences of images to a differential

stream (page 123, Section 4 Real-Time System, 1st paragraph, i.e. the plurality of images are reduced by segmenting the object from a background portion of the scene and then compressing the silhouette and texture information and sending the compressed silhouette and texture information in a differential stream to a central server); maintaining a 3D model of point samples representing the 3D object (page 121, section 3 View-Dependent Texturing, 2nd-4th paragraphs, i.e. Matusik et al. teaches sampling input images and rendering a 3D model by triangulating the samples); rendering the 3D model as a sequence of output image of the 3D object from an arbitrary point of view while acquiring and reducing the plurality of sequences of images and maintaining the 3D model in real-time (page 124, Section 4 Real-Time System) but does not specifically teach reducing the plurality of sequences of images to a differential stream of 3D operators and operands and maintaining a 3D model of point samples representing the 3D object from the differential stream, in which each point sample of the 3D model has 3D coordinates and intensity information.

Deering teaches reducing the plurality of sequences of images to a differential stream of 3D operators and operands (Figs. 4 (A-K), 9 (elements 410-450) and 14 (A-J); column 12, lines 35-41; column 17, lines 35-42, i.e. normal, position, and color information for the plurality of images are compressed into a differential stream of 3D operators and operands and columns 7-8, lines 40-17, i.e. it is inherent that two bits specifying whether a normal and/or color, specified at a vertex, is inherited/read from the mesh buffer or obtained from the current normal and/or color is an operator) and maintaining a 3D model of point samples representing the 3D object from the differential

stream, in which each point sample of the 3D model has 3D coordinates and intensity information (Fig. 14B; column 8, lines 18-20; column 9, lines 50-53, i.e. position information contains the 3D (x, y, z) coordinates and normal information indicates intensity information).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include reducing the plurality of sequences of images to a differential stream of 3D operators and operands and maintaining a 3D model of point samples representing the 3D object from the differential stream, in which each point sample of the 3D model has 3D coordinates and intensity information thereby providing a method for compressing data in real-time that substantially reduces the bit-size of the file to be transmitted with little loss in displayed object quality at low cost (Deering: column 5, lines 18-24 and 55-65).

Referring to claim 2, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, in which the acquiring and reducing are performed at a first node, and the rendering and maintaining are performed at a second node, and further comprising: transmitting the differential stream from the first node to the second node by a network (page 123, Section 4 Real-Time System, 1st paragraph, i.e. the first node is comprised of the cameras and the desktop PCs/clients that acquire and reduce the images and the second node is a central server that maintains and renders the view-dependent 3D models).

Referring to claim 3, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, wherein the object is moving with

respect to the plurality of cameras (page 115, Section 1 Introduction, 2nd and 4th paragraphs; page 116, Section 1.1 Previous Work, 6th paragraph; page 123, Section 4 Real-Time System, 1st paragraph, i.e. it is understood that the use of four calibrated video cameras capturing a video stream and performing processing steps on the video stream indicates movement of the foreground object).

Referring to claim 4, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, wherein the reducing further comprises segmenting the object from a background portion in a scene; and discarding the background portion (page 123, Section 4 Real-Time System, 1st paragraph, i.e. the plurality of images are reduced by segmenting the object from a background portion of the scene and then compressing the silhouette and texture information and sending the compressed silhouette and texture information in a differential stream to a central server indicating that the background portion is discarded).

Referring to claim 7, the rationale for claims 1 and 6 is incorporated herein, Matusik et al., as modified by Deering above, teaches the method of claim 1, comprising reducing the sequences of images to a differential stream having operators but does not specifically teach wherein the operators include insert, delete, and update operators.

Deering teaches wherein the operators include update and insert operators (column 13, lines 19-54; columns 20-21, lines 50-14; column 21, lines 17-29; column 22, lines 6-14 and 42-25; column 23, lines 29-60, i.e. normal and color values are updated by replacing the previous values stored in the mesh buffer with new values labeled as current values (i.e. deleting the previous values and inserting the current

values), Deering further teaches that other instruction sets may be used and that new vertices may be inserted into the mesh buffer thus insert, delete, and update operators are inherent although the specific words are not found).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include wherein the operators include update, delete, and insert operators thereby providing a method for compressing data in real-time that substantially reduces the bit-size of the file to be transmitted with little loss in displayed object quality at low cost (Deering column 5, lines 18-24 and 55-65) and thus improving effective bandwidth for a graphics accelerator system, including shared virtual reality display environments (Deering column 17, lines 7-13).

Further, although Deering does not specifically teach wherein the operators are specifically named insert, delete, and update such operators are well known in the art, therefore it would have been obvious to one skilled in the art at the time of the invention to include said operators in the method of Matusik et al., because it would provide a more accurate rendering of the image.

Referring to claim 8, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, but does not specifically teach wherein the associated operand includes a 3D position and color as attributes of the corresponding point sample.

Deering teaches wherein the associated operand includes a 3D position and color as attributes of the corresponding point sample (Figs. 4K, 10 (element 630) and 14 (A-B)).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include wherein the associated operand includes a 3D position and color as attributes of the corresponding point sample thereby providing a method for compressing data in real-time that substantially reduces the bit-size of the file to be transmitted with little loss in displayed object quality at low cost (Deering column 5, lines 18-24 and 55-65) and thus improving effective bandwidth for a graphics accelerator system, including shared virtual reality display environments (Deering column 17, lines 7-13).

Referring to claim 10, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, in which the point samples are maintained on a per camera basis (page 121, Section 3 View-Dependent Texturing, 2^{nd}-4^{th} paragraphs, i.e. sparse point sampling each image by sampling along the 3D rays and forming a texture matrix associated with camera *i* is understood to be maintaining the point samples on a per camera basis).

Referring to claim 13, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, in which the point samples are rendered as polygons (pages 121-122, Section 3 View-Dependent texturing, i.e. Matusik et al. teaches triangulation of sample points to construct a polygonal blending field wherein the triangles drawn are the actual triangles of the scene model).

Referring to claim 14, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, further comprising sending a silhouette image corresponding to a contour of the 3D object in the differential stream for each reduced image (page 123, Section 4 Real-Time System, 1st paragraph, i.e. the plurality of images are reduced by segmenting the object from a background portion of the scene and then compressing the silhouette and texture information and sending the compressed silhouette and texture information in a differential stream to a central server).

Referring to claim 15, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, in which the differential stream is compressed (page 123, Section 4 Real-Time System, 1st paragraph, i.e. the plurality of images are reduced by segmenting the object from a background portion of the scene and then compressing the silhouette and texture information and sending the compressed silhouette and texture information in a differential stream to a central server).

Referring to claim 16, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, but does not specifically teach wherein the associated operand includes a normal of the corresponding point sample.

Deering teaches wherein the associated operand includes a normal of the corresponding point sample (Figs. 4K, 10 (element 630) and 14 (A-B); column 7, lines 40-50, i.e. per vertex normal and/or color information is directly bundled with the position information in the data stream).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include wherein the associated operand includes a normal of the corresponding point sample thereby providing a method for compressing data in real-time that substantially reduces the bit-size of the file to be transmitted with little loss in displayed object quality at low cost (Deering column 5, lines 18-24 and 55-65) and thus improving effective bandwidth for a graphics accelerator system, including shared virtual reality display environments (Deering column 17, lines 7-13).

Referring to claim 17, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, in which the associated operand includes reflectance properties of the corresponding point sample.

Deering teaches wherein the associated operand includes reflectance properties of the corresponding point sample (column 8, lines 49-54).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include wherein the associated operand includes reflectance properties of the corresponding point sample thereby providing a method for compressing data in real-time that substantially reduces the bit-size of the file to be transmitted with little loss in displayed object quality at low cost (Deering column 5, lines 18-24 and 55-65) and thus improving effective bandwidth for a graphics accelerator system, including shared virtual reality display environments (Deering column 17, lines 7-13).

Referring to claim 18, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, in which pixels of each image are classified as either foreground or background pixels, and in which only foreground pixels are reduced to the differential stream (page 123, Section 4 Real-Time System, 1st paragraph).

Claims 9, 12, and 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matusik et al., "Polyhedral Visual Hulls for Real-Time Rendering", Proceedings of Twelfth Eurographics Workshop on Rendering, 2001, pages 115-125, in view of Deering U.S. Patent No. 5867167 as applied to claim 1 above, and further in view of Pauly et al., "Spectral Processing of Point-Sampled Geometry", *Proc. of 28th Annual Conf. on Computer Graphics and Interactive Techniques,* SIGGRAPH 2001, ACM Press, New York, NY, 379-386.

Referring to claim 9, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, but does not specifically teach wherein the point samples are rendered with point splatting.

Pauly et al. teaches wherein the point samples are rendered with point splatting (page 382, Section 3 Scattered Data Approximation, Regular Sampling, 2nd paragraph; page 384, Section 7 reconstruction, Blending function).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include

wherein the point samples are rendered with point splatting thereby allowing for direct processing or manipulation of point-sampled geometry without a need for polygonal meshes (page 379, Section 1 Introduction, 1st paragraph).

Referring to claim 12, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, but does not specifically teach estimating a local density for each point sample.

Pauly et al. teaches estimating a local density for each point sample (page 379, Section 1 Introduction, 3rd paragraph).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include estimating a local density for each point sample thereby reducing the complexity of overly dense sample models (page 379, Section 1 Introduction, 3rd paragraph).

Referring to claim 19, the rationale for claims 1 and 8 is incorporated herein, Matusik et al., as modified above, teaches the method of claims 1 and 8 wherein attributes are assigned to each point sample, but does not specifically teach wherein the attributes are altered while rendering.

Pauly et al. teaches wherein the attributes are altered while rendering (page 384, Section 7 Reconstruction, Blending Normals).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include wherein the attributes are altered while rendering thereby allowing for direct processing

or manipulation of point-sampled geometry without a need for polygonal meshes (page 379, Section 1 Introduction, 1st paragraph).

Referring to claim 20, the rationale for claim 19 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 19, but does not specifically teach wherein the point attributes are organized in a vertex array that is transferred to a graphics memory during the rendering.

Deering teaches wherein the point attributes are organized in a vertex array that is transferred to a graphics memory during the rendering (column 6, lines 35-41; column 7, lines 39-55, i.e. it is understood that the compressed geometry containing the point color and normal attributes is stored in a vertex array in the mesh buffer).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include wherein the point attributes are organized in a vertex array that is transferred to a graphics memory during the rendering thereby providing a method for compressing data in real-time that substantially reduces the bit-size of the file to be transmitted with little loss in displayed object quality at low cost (Deering column 5, lines 18-24 and 55-65) and thus improving effective bandwidth for a graphics accelerator system, including shared virtual reality display environments (Deering column 17, lines 7-13).

Claims 5 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matusik et al., “Polyhedral Visual Hulls for Real-Time Rendering”, Proceedings of Twelfth Eurographics Workshop on Rendering, 2001, pages 115-125, in view of Deering

U.S. Patent No. 5867167 as applied to claim 1 above, and further in view of Kanade et al. "Virtualized Reality: Constructing Virtual Worlds from Real Scenes", IEEE Computer Society, pp.34-47, January - March 1997.

Referring to claim 5, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, but does not teach wherein the reducing further comprises selecting, at any one time, a set of active cameras from the plurality of cameras.

Kanade et al. teaches wherein the reducing further comprises selecting, at any one time, a set of active cameras from the plurality of cameras (page 37, Section Camera Clusters, i.e. it is understood that the reference camera and 3-6 immediate neighbor cameras are the active cameras).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include a plurality of cameras wherein the reducing further comprises selecting, at any one time, a set of active cameras from the plurality of cameras because using many cameras improves the extent and accuracy of stereo while selecting a set of active cameras from the plurality of cameras reduces the computational costs.

Referring to claim 11, the rationale for claim 1 is incorporated herein, Matusik et al., as modified above, teaches the method of claim 1, but does not specifically teach wherein the rendering combines the sequence of output images with a virtual scene.

Kanade et al. teaches wherein the rendering combines the sequence of output images with a virtual scene (page 45, Combining virtual and virtualized environments).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. to include wherein the rendering combines the sequence of output images with a virtual scene thereby allowing virtual foreground objects to be introduced into the virtualized environment.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Matusik et al., "Polyhedral Visual Hulls for Real-Time Rendering", Proceedings of Twelfth Eurographics Workshop on Rendering, 2001, pages 115-125, in view of Deering U.S. Patent No. 5867167 as applied to claim 1 above, and further in view of Lee et al. U.S. Patent No. 5684887.

Referring to claim 6, the rationale for claim 1 is incorporated herein, Matusik et al., as modified by Deering above, teaches the method of claim 1, but does not specifically teach wherein the differential stream of 3D operators and associated operands reflect changes in the plurality of sequences of images.

Lee et al. teaches wherein the differential stream of 3D operators and associated operands reflect changes in the plurality of sequences of images (column 9, lines 40-67; column 10, lines 26-36, i.e. it is understood that the changes reflected for a single camera can easily be applied to the plurality of cameras taught by Matusik et al. since each camera provides a video stream to a PC/client for processing).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Matusik et al. and Deering to

include the teachings of Lee wherein the differential stream of 3D operators and associated operands reflect changes in the plurality of sequences of images thereby providing a method wherein a slowly changing background can be updated every frame and the object boundary can be recovered instantaneously by a difference operation (Lee et al. column 10, lines 1-3).

Response to Arguments

Applicant's arguments filed 12/8/2005 have been fully considered but they are not persuasive.

Applicant first argues that "...Those of ordinary skill in the art would never confuse point models as claimed and triangle models as cited by the Examiner...".

Examiner respectively submits that those with ordinary skill in the art understand that 3-D point models are often tessellated to produce a 3-D polygonal mesh comprised of a multitude of 2-D polygons, see dependent claims 13, 14 and 18, and 3-D polygon mesh is often compressed/reduced to a 3-D model of point samples, see dependent claim 13 and the Pauly et al. reference cited above, page 379 Abstract and section 1 Introduction, 1st paragraph; page 380, section 1.1 Previous Work, final paragraph and section 1.2 Algorithm Overview; page 382, 1st column, Regular Sampling. Further, Matusik et al., page 121, section 3 View Dependent Texturing, 2nd-4th paragraphs, teaches triangulation of sample points to construct a blending field.

Examiner respectively requests that applicant see the response above for the arguments against the cited prior art of Matusik, Deering, Pauly, and Kanade regarding triangle models and point sampled models.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The combination of primary reference Matusik et al. with Deering teaches the limitations of claims 1-4, 7, 8, 10, and 13-18. Further, Matusik et al. teaches sampling input images and rendering a 3D model by triangulating the samples, see page 121, section 3 View-Dependent Texturing, 2nd-4th paragraphs.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., "...Matusik does not render a 3D point model...", page 5 of applicant's arguments) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Claim 1 recites the limitation of rendering a 3D model and claim 13 recites the limitation of rendering the point samples as polygons.

Applicant next argues, with respect to claim 3, that "...Matusik does not represent a moving object by a 3D point model...". Examiner respectively submits that Matusik

teaches wherein the sequence of input images are captured in a video stream, see page 123, Section 4 Real-Time System, 1st paragraph, and a video stream indicates movement of objects over a sequence of input images/frames.

Applicant then argues, with respect to claim 16, that "...the normals in Deering are surface normals of triangles, and not normals of point samples...". Examiner respectively submits that applicant look to column 7, lines 40-50 in Deering wherein normal values are specified per vertex, therefore this limitation is found in the prior art of Deering as cited.

Applicant then argues, with respect to claim 17, that "...reflectance properties of point samples are not described by Matusik or Deering ...". Examiner respectively submits that applicant should look to the rejection of claim 17 for the location of reflectance properties in the cited prior art.

In response to applicant's argument that Lee et al. is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, applicant argues, with respect to claim 6, that "...There are two basic problems with Lee. First, the invention discards the background; therefore, Lee is of no use. Matusik also discards the background; therefore, Lee cannot be combined with Matusik. Furthermore, Lee deals with monocular vision. In the claimed invention, the cameras

are at different poses, and by definition cannot be from the same view. The art of Lee is useless ...".

Examiner respectively submits that claim 1 in combination with claim 6 does not recite the limitation of background subtraction and further that Matusik is combined with Deering and Deering has position information indicating the position information of the object. Examiner further submits that each camera of Matusik provides a video stream at a single view and thus each single camera of Matusik deals with the monocular vision of Lee and so, Lee is not useless.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberta Prendergast whose telephone number is (571) 272-7647. The examiner can normally be reached on M-F 7:00-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ulka Chauhan can be reached on (571) 272-7782. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RP 3/22/2006

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SUPERVISORY PATENT EXAMINER